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TRANSPORTATION  
COMMISSION**

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## *Memorandum*

TO: Planning Committee

DATE: February 1, 2008

FR: Deputy Executive Director, Policy

W. I.

RE: Transportation 2035: Project Assessment – Quantitative Performance Evaluation

The Commission has expressed interest in carrying forward a performance-based approach to the Transportation 2035 Plan. In January, the Commission provisionally approved a set of performance objectives that provides a framework for the quantitative evaluation of projects proposed for inclusion in the Plan. The Commission would use the information from this evaluation, along with key policy considerations, in trade-off discussions leading to selection of projects for inclusion in the Plan. Staff has refined the approach and criteria for the quantitative project evaluation, presented to you in January, based on discussions with the partnership and MTC's advisors. Staff now seeks the Committee's approval of the quantitative project performance evaluation approach and criteria in order to proceed with the analysis. Staff is also developing a parallel policy assessment that will highlight key policy considerations at the project-level. This information will complement the quantitative evaluation to more fully inform the trade-off discussions.

### **Approach to Quantitative Project Evaluation**

The proposed approach is to compare project costs and benefits in order to identify the most cost-effective projects with respect to the Transportation 2035 Performance Objectives. In sum, key aspects of the proposed approach include:

- Quantitative comparison of project costs and benefits: Wherever possible, benefits are to be valued monetarily, based on established economic research.
- Benefits related directly to the Transportation 2035 Performance Objectives: See Attachment A for complete listing (these objectives do not diminish the significance of other policy considerations in the trade-offs discussion).
- Projects compared directly and quantitatively: The evaluation will capture a wide range of project types. Data will be generated through the regional travel demand model, as possible. In some cases, alternative sources may be used. In particular, MTC staff may need to pioneer evaluation methodologies to quantify the benefits of regional funding programs (such as Transportation for Livable Communities, Lifeline and transit and roadway maintenance shortfall programs) in terms of the adopted performance objectives.
- Most cost-effective projects identified: The strength of this analysis lies in identifying the outliers (i.e. the highest and lowest project performers). It is not likely to be precise enough to distinguish among investments with very close benefit-to-cost ratios.
- Focus performance evaluation on major investment decisions: While practical limitations preclude evaluation of each of the 400 to 600 discretionary investments expected in the Plan, major investment decisions can be informed through evaluation of a subset of projects

defined by the guidelines in Attachment B. These guidelines account for approximately 80% of discretionary investment costs in the current Transportation 2030 plan. Some smaller projects will not be quantitatively evaluated, but be subject to a policy assessment in conjunction with trade-off discussions.

### **Criteria for Quantitative Project Evaluation**

Staff proposes four evaluation criteria (also see Attachment C):

1. Combined benefit-cost measure capturing reductions of delay, greenhouse gas emissions, particulate matter emissions, and fatal and injury collisions. The benefits are expressed in monetary terms. For example, the monetary value of delay is tied to the average regional wage rate; that of particulate matter reflects the costs associated with its health impacts. While the combined measure reflects the cumulative benefits associated with several performance objectives, information also will be provided on the individual components.
2. Cost per reduction in vehicle miles traveled (VMT). VMT has no inherent economic value aside from that associated with emissions and collisions, which are captured in the benefit-cost measure described above.
3. Cost per low-income household served (transit projects only). Staff seeks the Committee's approval to proceed with this criterion on a trial basis as a measure of affordability at the project-level. You may recall from your January meeting, staff's initial assessment was that affordability could be more meaningfully addressed at the policy level than through the project assessment. We still believe the policy component is key: pricing policies will significantly affect the ability of low-income households to benefit from existing and new infrastructure and services. However, at the urging of MTC's advisors, staff believes it worthwhile to try to capture transit affordability in the project evaluation as well.

Staff proposes this test measure following consultation with partners and members of MTC's Minority Citizens Advisory Committee (MCAC). The rationale for the measure is that transit alternatives serving low-income households can reduce the need to own additional automobiles, a significant transportation cost for low-income households. Staff proposes proceeding with this measure on a trial basis to allow us to try to address a variety of technical concerns raised by MTC's advisors and partners. If, after further review and discussion with MCAC members and partners, the technical issues cannot be satisfactorily resolved, the affordability objective would be addressed only through the policy assessment instead of adding the quantitative project evaluation.

4. Alternative benefit-cost measure for maintenance. This measure reflects public and private cost savings from performing maintenance on-time as opposed to deferring it. While this is not a complete measure, it illustrates a large component of benefits from the roadway and transit capital shortfall programs.

### **Policy Assessment**

The quantitative project evaluation represents just one set of considerations important for the trade-offs discussion. With the Planning Committee's direction, MTC staff will conduct a second parallel assessment to highlight key policy considerations for the projects proposed for inclusion in the Plan; the assessment would capture as many projects as possible, including many beyond those subject to the quantitative evaluation. The Vision Policy Strategies introduced in agenda item 2c will provide the framework for a more qualitative policy assessment. These strategies address five policy areas critical for achieving the Vision, based on the fall 2007 scenarios analysis; some policy strategies (e.g., goods movement) may be added. As described in item 2c, MTC staff will return to the Committee in March for approval of the policy strategies.

### **Recommendation and Next Steps**

Staff seeks the Committee's approval of the quantitative project performance evaluation approach and criteria described above. Staff anticipates continued consultation over the next few weeks with Partnership members on technical matters in gearing up for the quantitative project evaluation and policy assessment.

We expect the evaluation to take approximately six weeks, between early March and mid-April, and plan to present results to the Planning Committee, Partnership Board and Joint Policy Committee in May; we also intend to conduct extensive outreach, including county workshops, focus groups and polls, to seek public input on evaluation results and investment trade-offs. The Commission would use this input to inform its own trade-off discussions to determine investments that will be included in the financially constrained plan.

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Therese W. McMillan

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## Attachment A Project Evaluation Criteria Derived Directly From Performance Objectives

<b>“E” Principles</b>	<b>Goals</b>	<b>Recommended Performance Objectives = Benefits Captured</b>	<b>Proposed Project Performance Measures</b>
<b>Economy</b>	1. Maintenance & Safety	• Reduce fatal and injury collisions	• Combined benefit-cost – fatality and injury component [1]
		• Improve maintenance	• Alternative benefit-cost – cost savings from performing maintenance on time
	2. Reliability 3. Freight	• Reduce per capita delay	• Combined benefit-cost – delay component [1]
		None recommended	None recommended
<b>Environment</b>	5. Clean Air 6. Climate Protection	• Reduce per capita vehicle miles traveled	• Cost per VMT reduced
		• Reduce PM <sub>2.5</sub> and PM <sub>10</sub> emissions • Reduce CO <sub>2</sub> emissions	• Combined benefit-cost – emissions component [1]
<b>Equity</b>	7. Access 8. Livable Communities	• Reduce share of income spent by low-income household expenditures on transportation and housing combined (improve affordability)	• Cost per low-income household served (trial measure – transit projects only)

Notes:

[1] A single combined benefit-cost measure would incorporate benefits from reductions in fatal and injury collisions, delay, and particulate matter and carbon dioxide emissions.

## **Attachment B**

### **Projects Subject to Quantitative Evaluation**

MTC staff will select projects for evaluation from among those submitted to MTC by March 5. Staff propose to focus our efforts on the most costly and biggest-impact projects and programs under consideration for discretionary funding, as outlined by the guidelines below:

1. Committed projects and programs as defined by the Planning Committee on January 11, 2008 are not subject to evaluation.
2. Projects considered in the regional Freeway Performance Initiative (FPI) will be evaluated. Prior analyses conducted for the FPI will be used and supplemented, as needed.
3. MTC staff will select up to 100 other projects using cost and functional criteria:

(a) Projects with total cost of \$50 million or greater and with area-wide impacts would generally be subject to evaluation. Examples of projects with area-wide impacts include:

- New/enhanced transit service, including transit priority measures
- Freeway-to-freeway interchanges
- Freeway widenings, including HOV lanes & HOT lanes
- State highway widenings in areas with limited freeways

Examples of projects considered to have local impacts (and therefore not subject to evaluation) include:

- Arterial or intersection improvements, except reliever routes as noted above
- Local interchanges
- Individual, new transit stations/stops for existing services
- Transit center improvements & parking expansion
- Grade separations

(b) Regional funding programs (e.g., TLC/HIP, Regional Bike and Pedestrian Program, Lifeline, Climate Change, Clean Air) would be evaluated. Per Commission policy, MTC's ongoing Regional Operations Programs, Resolution 3434 projects and current TIP projects are deemed committed and would not be evaluated. Other programmatic categories generally would not be evaluated. Examples include: countywide bike and pedestrian projects, non-capacity enhancing arterial improvements, non-specific transit priority measures.

(c) MTC staff would consider narrowing the criteria if, after a review of the projects by March 5, the criteria net more than 100 projects.

### Attachment C Quantitative Project Evaluation Criteria

Proposed Project Performance Measures	Examples of Projects*
<b>Combined benefit-cost</b> Benefit equals value in dollars of reductions in: <ul style="list-style-type: none"> <li>• Delay</li> <li>• Particulate matter emissions</li> <li>• Carbon dioxide emissions</li> <li>• Fatalities and injuries</li> </ul>	Transit expansion and efficiency, e.g., Bus rapid transit/bus priority New ferry routes Rail extensions  Freeway expansion and operations, e.g., New carpool lanes/HOT lanes, freeway to freeway interchanges, projects from Freeway Performance Initiative  Regional programs, e.g. TLC/HIP, Lifeline, Regional Bike/Pedestrian Program,
<b>Cost per vehicle mile traveled (VMT) reduced</b>	
<b>Cost per low-income household served (trial measure)</b>	Transit expansion and efficiency per above
<b>Alternative benefit-cost for maintenance</b> Benefit equals direct public and private cost savings from performing maintenance on-time	Transit capital shortfall program and local streets and roads shortfall program

\* Applies only to projects that are not committed and meet other functional and cost criteria described in Attachment B.